

REMARKS

Please cancel Claims 1, 9-10, 23. Claims 2, 13, 17-20, 25-26, 30-31, 36, 40-42, and 45-46 have been amended. New Claims 48-53 have been added. After entry of the present amendments, Claims 2-8, 11-22, and 24-53 remain in this application.

Section 102 Rejections

Claims 1, 2, 9-10, 12-13, 15-16, 20-25, 31, 35-36, and 42-44 were rejected under 35 U.S.C. § 102(b) as being allegedly anticipated by U.S. Patent No. 4,854,415 (Goschke).

Independent Claims 2, 20, 25, 26, 31, 36, and 42 have been amended to generally call for a jacket surrounding a housing of a transducer so as to preserve the structural integrity of the transducer and to protect against damage of the internal components of the transducer due to handling when the transducer is installed into a hearing aid or telecommunications system. The jacket also has a thickness and a mass that suppresses undesirable vibrational feedback by the transducer with other working components in the hearing aid or telecommunications system. Goschke, on the other hand, explicitly teaches the very disadvantages Applicants sought to overcome in the present application, and thus the claims as amended are patentable over Goschke.

In the Background section of Applicants' disclosure, Applicants pointed out that in prior art hearing aids and telecommunication devices, the receiver is susceptible to damage during assembly into a hearing aid/telecommunication device such as when the receiver is grasped with tweezers:

In both hearing aids and telecommunication devices, it is important for the receiver to be configured to withstand the forces associated with handling without damaging the housing. These forces can arise through the assembly of the receiver within a hearing aid, **such as when a receiver is grasped with tweezers while it is being positioned** or when force is placed on the housing when electrical connections are being made. Disfiguring the housing can easily occur because the housing material is thin and has a low hardness. One common type of damage is a simple dent that can occur in the housing. Dents can affect not only the electronics within the housing, but they can affect the performance of the acoustical chambers within the receiver. Because the housing of a receiver is typically made of a case and a cover that are made by a drawing technique, dents near the interface of the case and cover can also lead to acoustic leaks at the

interface. Because of the minimal thickness of the material in the housing and a minimal size of the receiver, magnetic and acoustical isolation are limited.

Applicants' disclosure, page 2, lines 9-22 (emphasis added). By contrast, Goschke explicitly teaches that the component parts can be removed from the mount, which the Examiner has identified as corresponding to the claimed jacket:

According to the invention, various component parts, particularly microphone and ear phone, are inserted into box-shaped mounts. The mounts are inwardly cushioned with pillows that are preferably fashioned as nubs of sound-absorbing material. When the component parts are plugged in, the pillows are elastically displaced and retain the component parts in the mount on the basis of elastic clamping power. **With, for example, a tweezers, however, the component parts can be removed from the mount.** Given the employment of sound-absorbing material, sound-sensitive component parts can be protected against injurious unwanted signals. The disadvantages of the prior art thus no longer occur.

Goschke, Col. 1, ll. 36-49 (emphasis added). The use of tweezers to remove the component parts is precisely one of the problems Applicants' disclosure seeks to avoid. The force applied by tweezers can damage the precious component parts, adversely affecting their performance and functionality. In Applicants' disclosure, the jacket surrounds the housing of the transducer and is installed to surround the housing before the transducer is assembled into the hearing aid or telecommunications system. In this manner, the internal components of the transducer are less prone to damage because the jacket provides structural rigidity and protection against forces applied by handling devices such as tweezers.

In Goschke, the mount includes elastic, sound-damping nubs 14 that are located inside the walls of the mount. These nubs facilitate insertion and removal of component parts with tweezers. Col. 1, ll. 40-45; col. 2, ll. 24-26. Goschke explicitly states: "An object of the present invention is to construct a mount for component parts of a hearing aid that may also differ in size that **enables an effortless replacement of component parts** and that nonetheless retains the inserted component parts." Col. 1, ll. 24-26 (emphasis added). The mount is fixed to the housing shell of the hearing aid so as to facilitate insertion or removal of ear phone 4 or microphone 6. Thus, the mount in Goschke is not to provide protection against damage during assembly of a transducer into a hearing aid or telecommunications system, but rather to enable an effortless replacement of the component parts themselves (without the mount) such as by grabbing them with tweezers. Goschke thus fails to teach a jacket adapted to enhance the

structural integrity of a transducer and to protect the transducer's housing and its internal components from damage due to handling. In fact, Applicants' invention overcomes the disadvantage taught in Goschke by requiring a jacket to be installed before the transducer is assembled into a hearing aid or telecommunications system. For this reason, Claims 2, 20, 25, 31, 36, and 42 are patentable over Goschke.

Claims 2, 20, 25, 26, 31, 36, and 42 also have been amended to call for a jacket having a thickness and a mass to suppress vibrational feedback. Goschke does not disclose a mount that is designed to suppress vibrational feedback. In fact, Goschke discloses suppressing acoustical feedback only through the use of sound-absorbing material in the mount: "In an embodiment of the invention wherein the elastic material [used inside the mount] is also sound-absorbing, **acoustic feedback** effects are avoided even better than hitherto." Col. 1, ll. 33-35 (emphasis added). Goschke makes no mention whatsoever of suppressing vibrational feedback. By contrast, the jacket of the present invention is adapted to have a thickness and a mass that suppresses the undesirable effects of vibrational feedback in addition to acoustic feedback. For example, Applicants disclosure states: "In the disclosed embodiment, the jacket 20 is stainless steel having a thickness of between approximately 0.05 mm and 0.2 mm" (these are exemplary figures) and "the additional mass from the jacket 20 reduces the vibration of the receiver 10, which decreases the vibrational feedback to the microphone to which the receiver 10 is coupled." Page 5, ll. 4-5, 11-13. Because the ear phone or microphone in Goschke is suspended inside the mount by the nubs, the mass of the mount would have no effect on reducing vibrational feedback.

For at least the foregoing reasons, Applicants respectfully submit that Claims 2, 20, 25, 26, 31, 36, and 42 as amended are patentable over Goschke. In addition, the dependent claims are also patentable over Goschke for at least the reason that the claims from which they depend are patentable thereover and for at least the following additional reasons.

Regarding Claim 13, Claim 13 has been amended to call for the jacket being preconfigured to be press-fit directly onto the housing. The mount disclosed in Goschke is not press-fit directly onto a housing. Accordingly, Claim 13 as amended is patentable over Goschke for at least this additional reason.

Regarding Claim 15, Applicants respectfully disagree that Goschke discloses a jacket adhered to a housing of an acoustic receiver. Goschke discloses that the mount is “glued to the **housing shell 13 of the hearing aid 1** with, for example, adhesive 12.” Col. 2, ll. 15-16 (emphasis added). The “housing shell” referred to in Goschke is *not* the housing of the ear phone, but rather the housing of the hearing aid itself. By contrast, in Claim 15, the recited housing is the housing of the acoustic receiver — not of the hearing aid. Therefore, Claim 15 is patentable over Goschke for at least this additional reason.

New method claim 48 requires the jacket to be installed over the housing of the transducer assembly before the transducer assembly is installed into a hearing aid or telecommunications system. Goschke does not teach this sequence of events and in fact teaches that a replacement ear phone or microphone can be inserted into the mount after the old earphone or microphone has been removed from the mount with tweezers. Therefore, new Claim 48 is patentable over Goschke.

New dependent Claim 53 calls for the jacket to be non-removably coupled to the housing of the acoustic receiver. By contrast, the mount in Goschke is removably attached to the housing of the ear phone/microphone. Therefore, new Claim 53 is believed to be allowable.

Section 103 Rejections

Claims 11, 26, 28, 37, and 47 were rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over U.S. Patent No. 4,854,415 (Goschke) in view of U.S. Patent No. 6,456,720 (Brimhall et al.).

Claim 11 was rejected as including a printed circuit board. Office Action, at 6. However, Claim 11 does not recite a printed circuit board: “11. The acoustic receiver of claim 2, wherein said jacket is adapted to shield said converting means from the effects of electromagnetic interference.” Brimhall does not disclose a jacket, and Goschke does not disclose adapting the mount to shield the ear phone or microphone from the effects of electromagnetic interference. In fact, Goschke was not concerned about suppressing EMI, but rather enabling an effortless replacement of component parts. The only teaching of a jacket being adapted to shield the converting means of an acoustic receiver from the effects of EMI is Applicants’ own disclosure.

Accordingly, Claim 11 is patentable over Brimhall et al. and Goschke for at least this additional reason.

Regarding Claim 26, it is believed to be patentable over Goschke for the reasons explained above in connection with the Section 102 rejection. Furthermore, Claim 26 is patentable for at least the additional reason that neither Goschke nor Brimhall et al. disclose or suggest any motivation to combine the printed circuit board (PCB) with the jacket as claimed. Brimhall et al. does not disclose a jacket. Goschke does not disclose a PCB located at least partially within a gap formed by one of its sections and a corresponding side, the PCB including electronics for processing the input audio signal. In fact, it would not be possible in Goschke to place a PCB as claimed in the mount disclosed in Goschke because the nubs would prevent locating a PCB within any gap between the mount and the housing of the ear phone. In fact, if the nubs in Goschke were removed along a surface of the component part to accommodate a PCB as claimed in Claim 26, the mount assembly disclosed in Goschke would not work as intended. According to Goschke, the nubs hold the component parts in the mounts on the basis of elastic spring power. If the nubs along one surface of the component part were removed to accommodate a PCB, the elastic spring power of the nubs would be rendered useless. Indeed, the electronics in Goschke are not shown and are connected to the component parts by the connecting cables 11 which lead to another part of the hearing aid. In addition, Brimhall et al. does not suggest combining its disclosed PCB with the claimed jacket to achieve the claimed advantages of enhanced structural integrity and vibrational dampening. Just because a PCB may be known in the relevant art does not necessarily mean that it would have been obvious to combine a PCB with the jacket as claimed. There must be some suggestion or motivation in the art to do so, and such is lacking in Brimhall et al. and Goschke.

Furthermore, Applicants' disclosure highlights another disadvantage to prior art assembly techniques in that the receiver can be damaged "when force is placed on the housing when electrical connections are made." Page 2, ll. 13-14. Applicants overcome this disadvantage in part by locating a PCB at least partially within a gap between the jacket and the housing of a transducer. In Goschke, the electrical connections are made directly to the component parts 4, 6 via connecting cables 11 as shown in FIG. 1. The use of a PCB in the manner claimed obviates the need to place any force on the housing in order to make electrical connections, thereby further

preserving the structural integrity of the transducer. Goschke, on the other hand, discloses and illustrates making the electrical connections in a manner that one embodiment of Applicants' invention sought to avoid.

Accordingly, Claim 26 is believed to be patentable over Goschke and Brimhall et al. for at least the additional reasons given above. Claims 28, 37, and 47 are also believed to be patentable over these references for at least the same reasons given with respect to Claim 26.

Claims 3-8, 14, 17-79, 26-27, 39-30, 32-34, 38-41, and 45-46 were rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over U.S. Patent No. 4,854,415 (Goschke). Regarding Claims 3-8, 27, 32, 38, and 39, the Office Action acknowledges that Goschke does not disclose a polymetric material. In fact, Goschke does not disclose a jacket made of stainless steel, soft magnetic material, polymer, Kapton, or epoxy, or a jacket that includes silicone. Applicants' disclosure teaches that the selection of these materials is to achieve at least the following advantages: structural integrity and electromagnetic shielding. Goschke discloses the use of elastic nubs fixed to the interior of the mount in order to achieve acoustic dampening, but Goschke contains no disclosure whatsoever of fabricating the mount from a material to achieve structural integrity or electromagnetic shielding. In fact, Goschke was not concerned with preserving the structural integrity of the ear phone or microphone (and in fact explicitly discloses that the ear phone/microphone can be removed by tweezers—a disadvantage Applicants' disclosure explicitly seeks to overcome) or with shielding the working components of the ear phone or microphone from the effects of EMI (rather Goschke only mentions acoustical dampening through the use of nubs in the mount). Rather, the stated objective in Goschke was to provide a mount that facilitated easy removal and installation of components into and out of the mount. In short, there is no motivation or suggestion in Goschke to fabricate a jacket as claimed using material that provides structural integrity or EMI shielding. The fact that the claimed materials may be known in the art does not mean, absent some suggestion or motivation in the prior art, that it would have been obvious to use such materials in the claimed jacket to achieve the claimed structural integrity or EMI shielding.

Regarding Claims 17-19, 30, 40-41, and 45-46, the Office Action acknowledges that Goschke does not disclose a specific shape such as D-, cylindrical-, or trapezium-shaped, but states that Goschke does not restrict to any specific shapes and therefore it would have been

obvious to use any shape. These claims have been amended to call for a jacket (as opposed to the transducer itself) having a specific shape. Applicants argue that Claims 17-19, 30, 40-41, and 45-46 as amended are allowable because the claimed jacket shapes are not arbitrary or merely a matter of design choice. Rather, the selected shapes further one of the advantages of the claimed invention, *i.e.*, enhancing the structural integrity of the transducer which the jacket protects. For example, Applicants state on page 7, lines 26-28: "In the embodiment of FIGS. 7A and 7B and FIGS. 8A and 8B, the cylindrical jacket 180 and the D-shaped jacket 190, respectively, **provides structural integrity** and also possible electromagnetic shielding." As argued above, Goschke was not concerned with preserving the structural integrity of component parts, but rather with enabling the effortless replacement of the component parts. Therefore, Claims 17-19, 30, 40-41, and 45-46 are believed to be patentable over Goschke for at least the foregoing reasons.

Regarding Claims 14 and 33, the Office Action acknowledges that Goschke does not disclose a welded jacket but states that welding is well known in the art and therefore it would have been obvious to use welding for bonding the jacket and the housing. Here, Goschke actually *teaches away* from using welding or any other methodology which would fixedly secure the component part to the mount, because welding would be totally contrary to the teachings of Goschke. Goschke repeatedly states that its disclose system "enables an effortless replacement of component parts" and therefore it is critical in Goschke that the component part be removably inserted into the mount. Welding the component part to the mount would totally defeat Goschke's stated objective, and it would therefore not have been obvious to one skilled in the art at the time of the invention to take the mount disclosed in Goschke and weld it to a component part. Accordingly, Claims 14 and 33 are believed to be patentable over Goschke for at least the foregoing reasons.

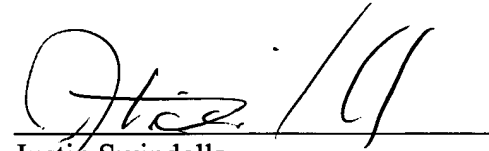
Conclusion

Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

A check is enclosed for \$986.00 to cover the fee for additional claims and the extension of time. The Commissioner is authorized to deduct any additional fees required (except for payment of the issue fee) from or to credit any overpayment to Jenkins & Gilchrist, P.C. Deposit Account No. 10-0447, Order No. 47161-00018USPT.

Respectfully submitted,

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